

Fun with QML and JavaScript

Mobile Apps for MeeGo



Embedded Linux
Conference

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Fast Development on MeeGo™



QML

+



JavaScript

=



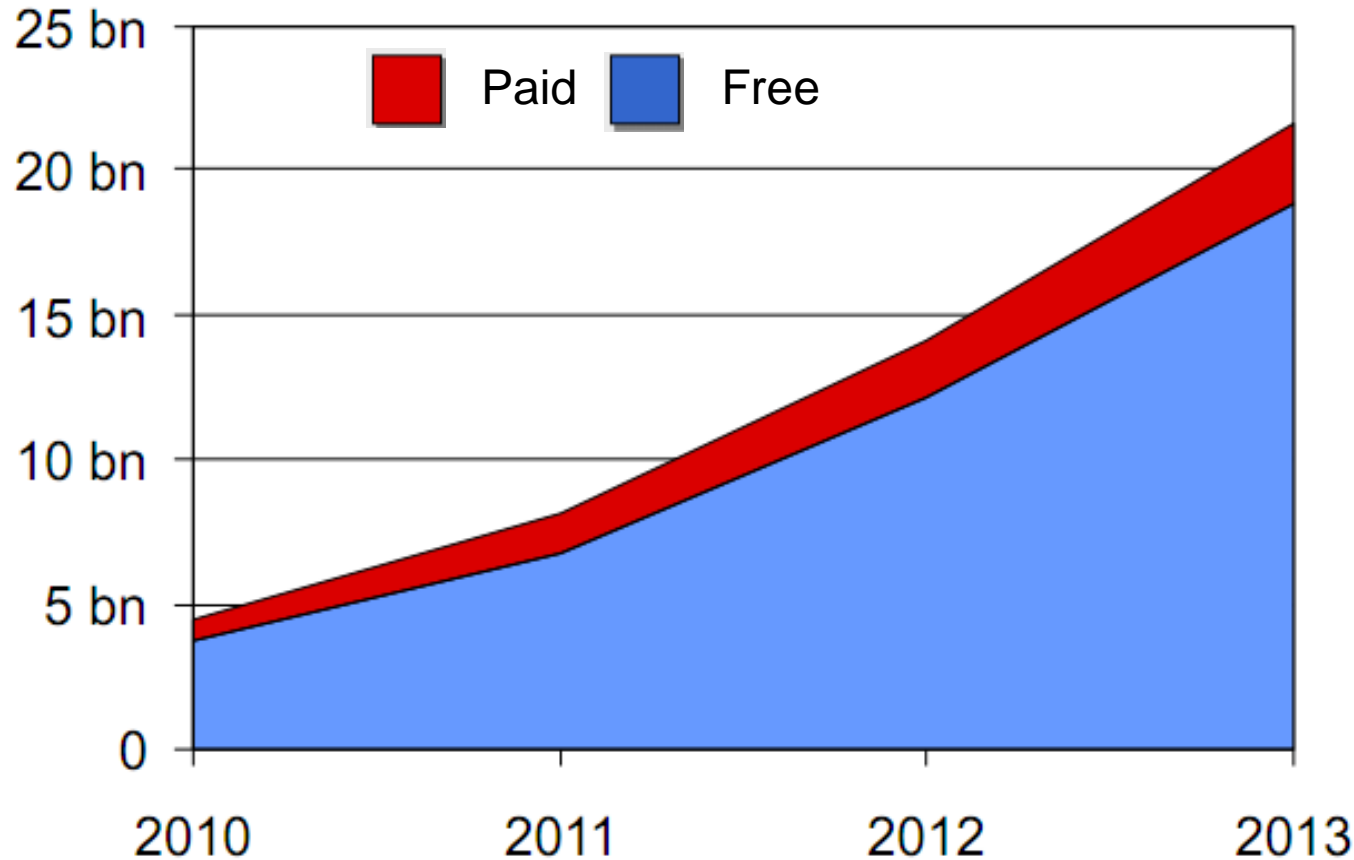
Mobile Apps



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Mobile Apps Download



By 2013

Total
Revenue

\$29 billion+

Source: [Gartner](#)



What is MeeGo

MeeGo™ *is a Linux-based **open source** mobile operating system*

*Targeted to **mobile devices** & **consumer electronics***



What makes MeeGo™ Exciting ?

Fully Open Source

Linux Foundation

Target Multiple devices



Available Today

MeeGo V1.1 - Handsets

MeeGo V1.1 - Net books

MeeGo V1.1 - In-Vehicle Infotainment

... and SmartTV, IPTV-boxes, Tablets



MeeGo Development Environment



- Qt Application Framework
- IDE – Qt Creator
- Qt Quick & QML
- Qt UI Designer
- Qemu Emulator
- Smartphone Simulator

Available Today ... and we have a device to test



3 Steps to Develop FAST on MeeGo



+



=



Cutting-edge UI

Rich Features

Mobile Apps

Qt Quick & QML

JavaScript

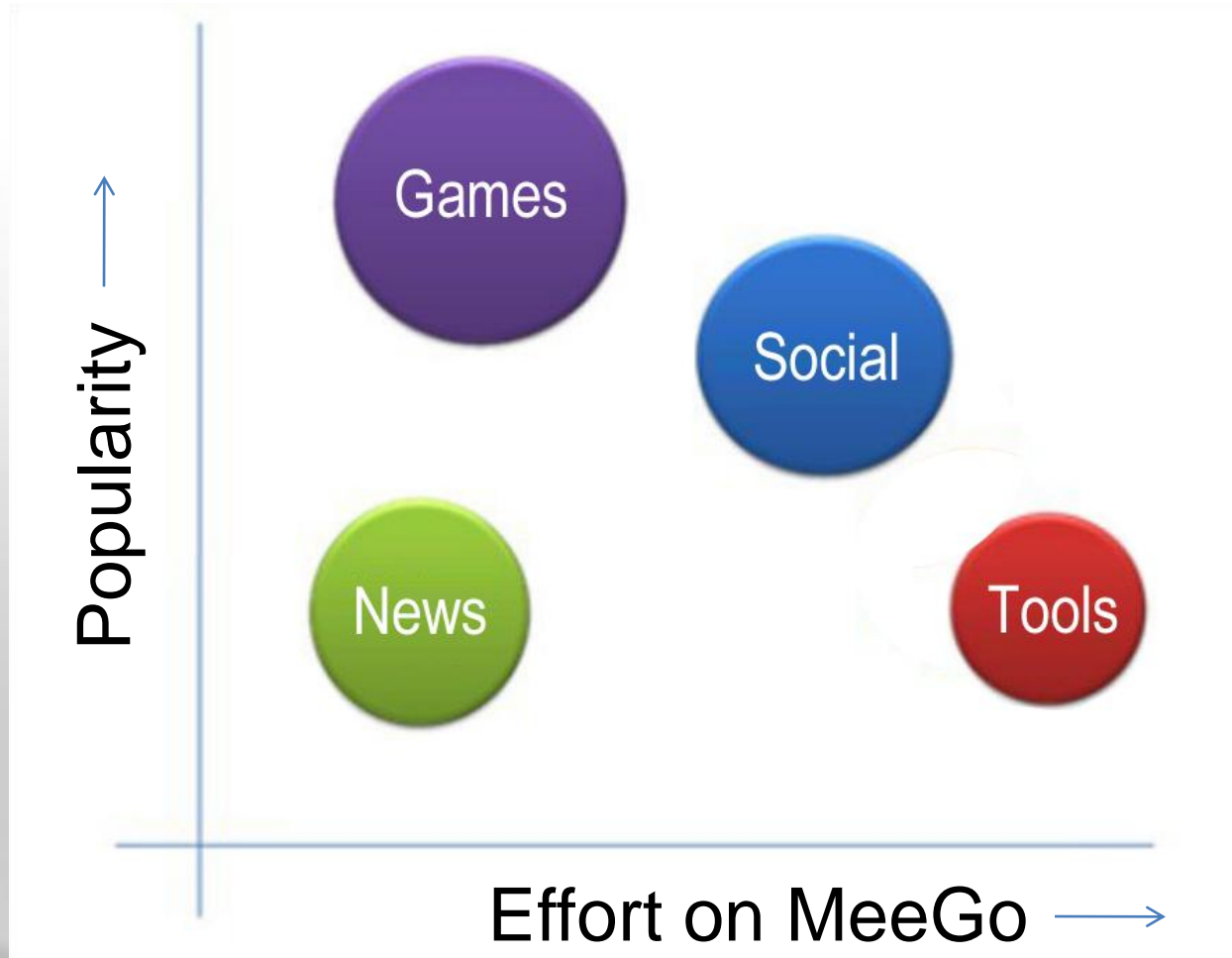
Fast



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4 Mobile Apps for MeeGo



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1/4 News Apps on MeeGo

CNN News

News



	PlayStation chief: Nintendo makes 'babysitting tools'
	Cathie Black vows to come back: 'I'm a warrior'
	Larry Summers on a shutdown: The risks this time are greater
	A brace of Audis makes a play for American hearts and wallets



1/4 News Apps on MeeGo



XML
Reader



Display UI
(Delegate)



List/Grid
View



1/4 News Apps on MeeGo

XML Reader

News

```
<item>
  <title>When good stadium names go bad</title>
  <link>http://rss.cnn.com/~r/rss/magazines\_fortune/~3/wmlnnbCbRGQ/</link>
  <guid isPermaLink="false">http://money.cnn.com/guid</guid>
  <media:thumbnail url="staples_center.01.jpg" height="90" width="120" />
  <description>A well loved brand name on a shiny new building ...</description>
  <pubDate>Mon, 28 Mar 2011 11:26:01 EDT</pubDate>
</item>
```

http://rss.cnn.com/rss/magazines_fortune.rss

1/4 News Apps on MeeGo

XML Reader

News

```
XmlListModel {  
    id:listmodel  
    source:"http://rss.cnn.com/rss/magazines_fortune.rss"  
    query: "/rss/channel/item"  
    namespaceDeclarations: "declare namespace media=\"http://search.yahoo.com/mrss/\";"  
    XmlRole { name: "title"; query: "title/string()" }  
    XmlRole { name: "imagesource"; query: "media:thumbnail/@url/string()" }  
}
```

1/4 News Apps on MeeGo

Display UI (Delegate)



PlayStation chief:
Nintendo makes
'babysitting tools'

Delegate is a component that creates an instance for each item in the model



1/4 News Apps on MeeGo

Delegate

```
delegate: BorderImage {
    id: delegate
    border.right:70
    source: "images/list.png"
    width: screen.width; height: 90
    Image {
        id: thumbnail
        source: imagesource
        width:90; height:90
    }
    Text {
        text: title
        anchors.left:thumbnail.right
        anchors.right:parent.right
        anchors.rightMargin:70
        wrapMode: Text.WrapAtWordBoundaryOrAnywhere
        anchors.leftMargin:10
        anchors.verticalCenter:parent.verticalCenter
        font.pixelSize:18
        style:Text.Sunken
        styleColor:"white"
        color:"#444"
    }
}
```

News

1/4 News Apps on MeeGo

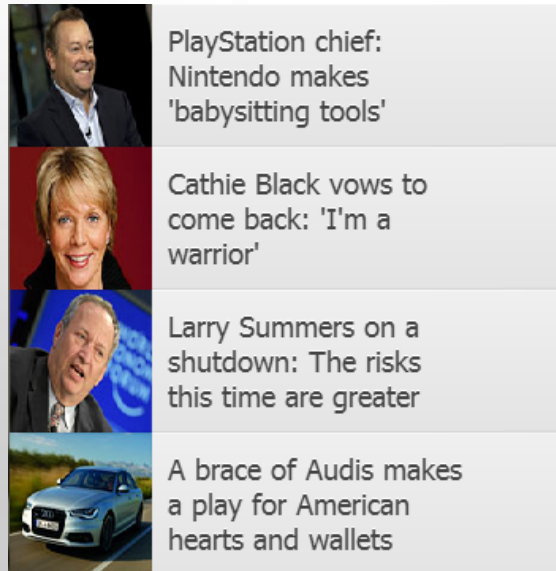
ListView

News

```
ListView {  
    id: listview  
    width: screen.width  
    height: screen.height  
    model: listmodel  
    delegate: BorderImage {  
        ...  
    }  
}
```


1/4 News Apps on MeeGo

List View

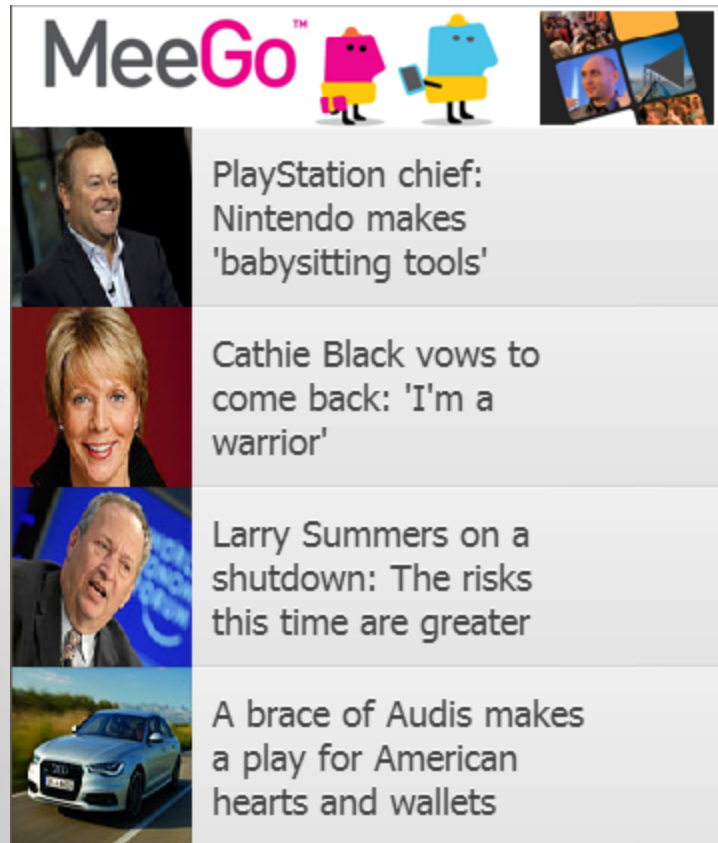


Grid View



1/4 News Apps on MeeGo

Demo



2/4 Social Apps on MeeGo



Username
admin

Password

☐ Remember Me

Log in »



REST
API



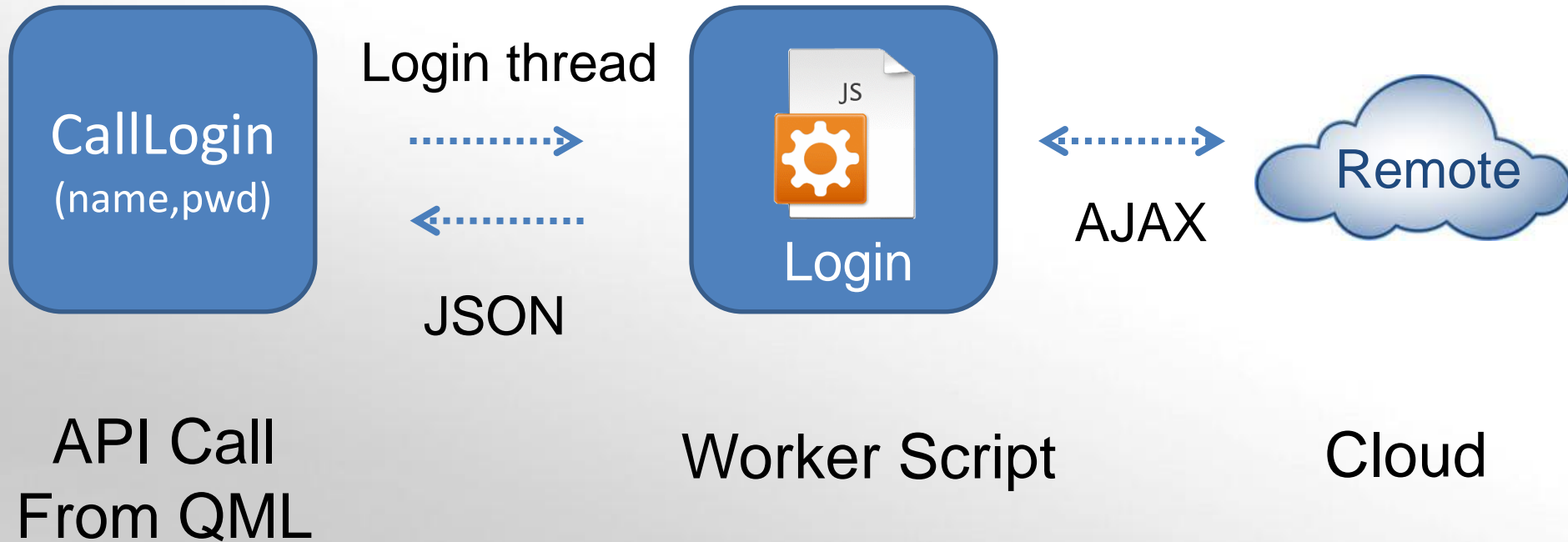
Auth.
Welcome



Access
Edit
Data



2/4 Social Apps on MeeGo



2/4 Social Apps on MeeGo

Social

1. API Call
2. Login thread instance
3. Worker Script
4. Login.js with AJAX



2/4 Social Apps on MeeGo

Social

API Call

```
onBtnLoginClicked:
{
    if (!loggedinuser)
    {
        workerlogin.sendMessage(
            { 'username':txtUsername,
              'password':txtPassword});
    }
}
```



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2/4 Social Apps on MeeGo

Social

Login Thread Instance

```
MyApp.ScriptLogin{  
    id:workerlogin;  
    onMessage:  
    {  
        console.log ("Logged In")  
    }  
}
```



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2/4 Social Apps on MeeGo

Social

ScriptLogin.QML (Actual Thread)

```
import Qt 4.7

WorkerScript {
    id: myWorker
    source: "Login.js"
}
```



2/4 Social Apps on MeeGo

Login.js with AJAX

```
WorkerScript.onMessage = function(msg) {  
    var doc = new XMLHttpRequest();  
    doc.onreadystatechange = function() {  
        if (doc.readyState == XMLHttpRequest.HEADERS_RECEIVED) {  
            console.log("HEADERS_RECEIVED");  
        } else if (doc.readyState == XMLHttpRequest.DONE) {  
            var response = doc.responseText;  
            var myObject = eval('(' + response + ')');  
            WorkerScript.sendMessage(myObject)  
        }  
    }  
    var u = msg.username;  
    var p= msg.password;  
    var uri = "http://meego/finderApiJson.svc?method=auth&service=auth&v=1";  
    var txtjson = '[{"class": "Auth", "pwd": "' + p + '", "login": "' + u + '"}]';  
    doc.open("POST", uri);  
    doc.send(txtjson);  
}
```



3/4 Tools on MeeGo

Tools



N900



Access Device Data



3/4 Tools on MeeGo



Device
Data



Qt Mobility
API



JavaScript
Binding



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3/4 Tools on MeeGo

Tools



JavaScript Expressions

Import JavaScript Files

Qt Mobility API

JavaScript



3/4 Tools on MeeGo: Clock.js

Tools

```
function gettime()  
{  
    var mytime;  
    var today=new Date();  
    var h=today.getHours();  
    var m=today.getMinutes();  
    var s=today.getSeconds();  
  
    mytime=h+":"+m+":s";  
    return(mytime);  
}
```

3/4 Tools on MeeGo: QML Binding

```
import Qt 4.7
import "clock.js" as MyClock
```



Tools

```
Rectangle {
    width: 800
    height: 430
    Text {
        id: txttime
        anchors.horizontalCenter: parent.horizontalCenter
        y: 60
        text: MyClock.gettime()
        font.pointSize: 50
        color: "#50b77b"
    }
    Timer {
        interval: 500; running: true; repeat: true
        onTriggered: txttime.text = MyClock.gettime()
    }
}
```


3/4 Tools on MeeGo: Qt Mobility



QML Plug-ins	Qt Mobility API
Gallery	Document Gallery API
Location	Location API
Multimedia	API includes audio and video
Service Framework	Discovering and connecting to services
Messaging	Messaging , email ,sms etc



3/4 Tools on MeeGo: Multimedia

Tools

```
import Qt 4.7
import QtMultimediaKit 1.1
...

Audio {
    id: myMedia
    source: "beethoven.wav"
}
MouseArea {
    id: playArea
    anchors.fill: parent
    onPressed: { myMedia.play() }
}
```

3/4 Tools on MeeGo: Location

```
import Qt 4.7
import QtMobility.location 1.1
Rectangle {
    width: 500
    height: 500
    Map {
        id: myMap
        size.width: parent.width
        size.height: parent.height
        zoomLevel: 5
        center: Coordinate {
            latitude: 101
            longitude: 202
        }
    }
}
```

Tools

3/4 Tools on MeeGo: Location

Demo

Tools



4/4 Fun and Games on MeeGo

Angry Developer

Games



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4/4 Fun and Games on MeeGo

Games



Graphics



State
Animation



Events
Binding



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4/4 Fun and Games on MeeGo

Graphics

Elements

Shapes

Text

Animation

State

Transitions

Transform.

Binding

Property

JavaScript

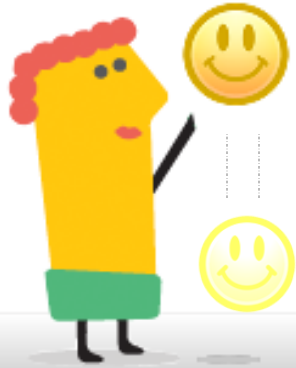
C++



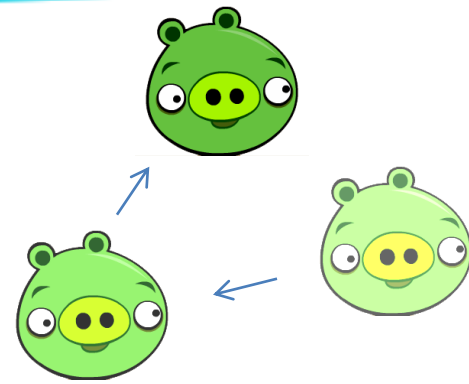
4/4 Fun and Games on MeeGo

SCORE:

12:31:24



Playing



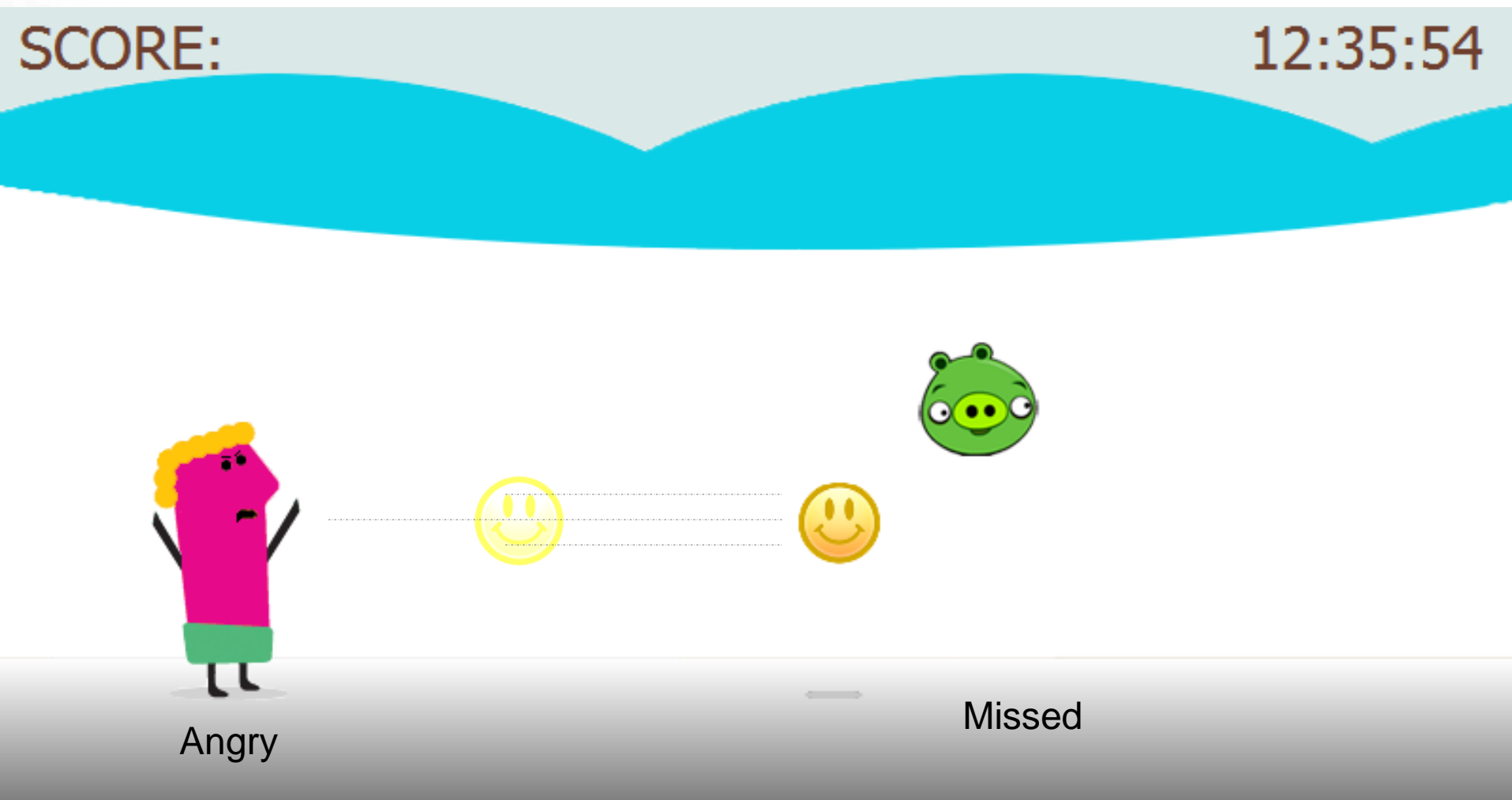
Moving



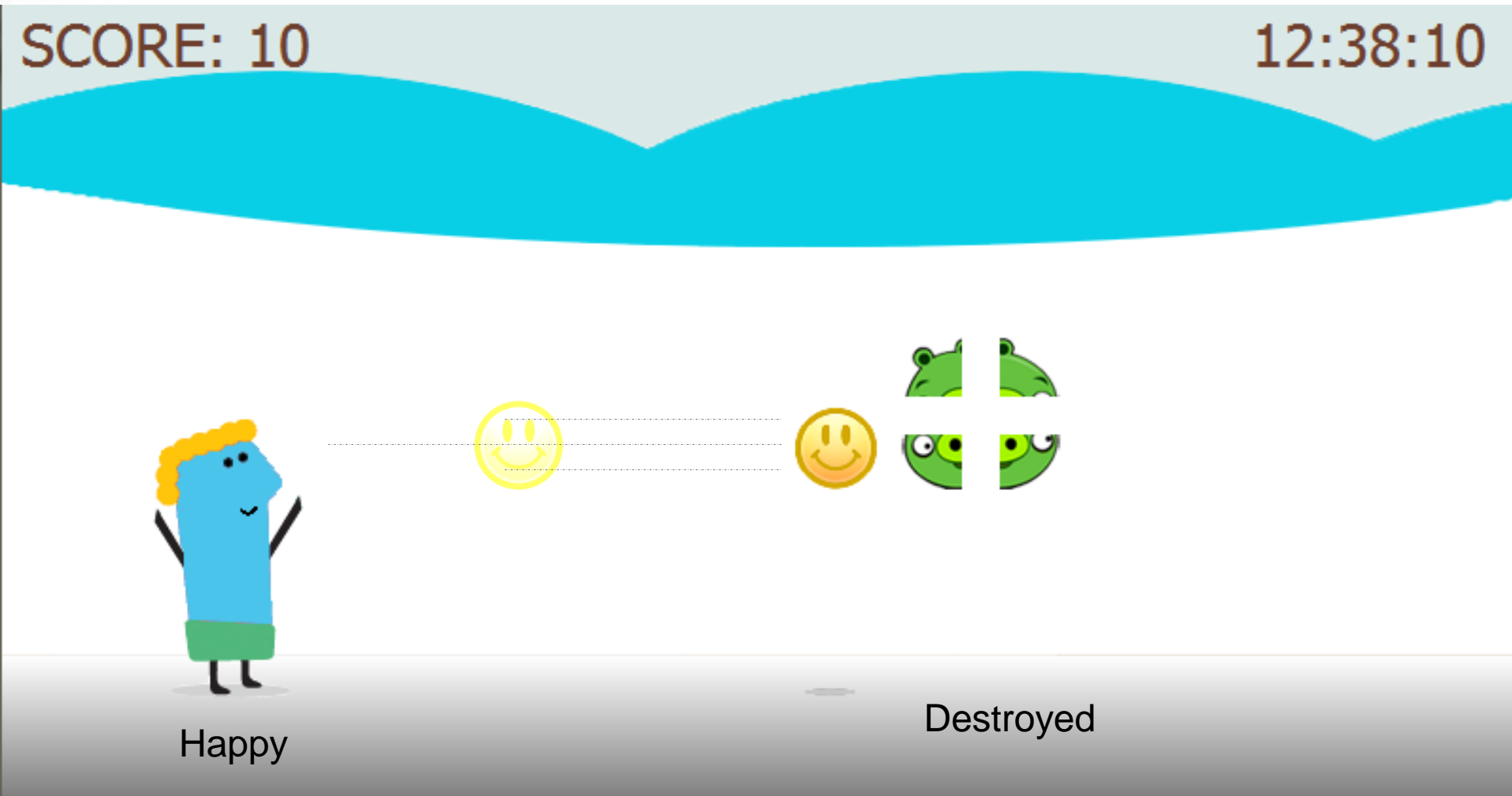
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4/4 Fun and Games on MeeGo



4/4 Fun and Games on MeeGo



4/4 Fun and Games: QML Elements

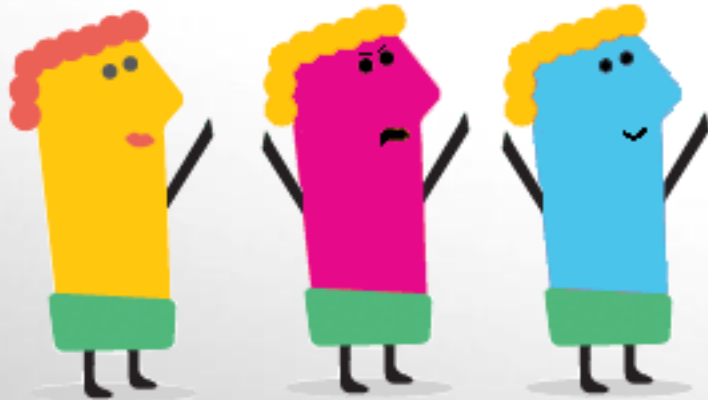
```
Image {  
    id:meego  
    x:75  
    y: smiley.minHeight - 100  
    source: "meegochar.png"  
}
```



```
Rectangle {  
    gradient: Gradient {  
        GradientStop { position: 0.0; color: "white" }  
        GradientStop { position: 1.0; color: "gray" }  
    }  
}
```



4/4 Fun and Games: State Change



Playing → Angry → Happy



Pig Moving → Pig Destroyed

4/4 Fun and Games: State Change

```
states: [  
  State {  
    name: "angry"  
    PropertyChanges { target: meego; source: "meegocharAngry.png" }  
    PropertyChanges { target: smiley; x: smileyx }  
    PropertyChanges { target: shadow; x: smileyx }  
  },  
  State {  
    name: "happy"  
    PropertyChanges { target: meego; source: "meegocharHappy.png" }  
    PropertyChanges { target: pig; source: "pigDestroyed.png" }  
    PropertyChanges { target: timerpig; running: false }  
    PropertyChanges { target: sqAnimation; running: false }  
  }  
]
```

4/4 Fun and Games: Ball Animation



Bouncing Ball Animation



Throw Transition



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4/4 Fun and Games: Bouncing Ball

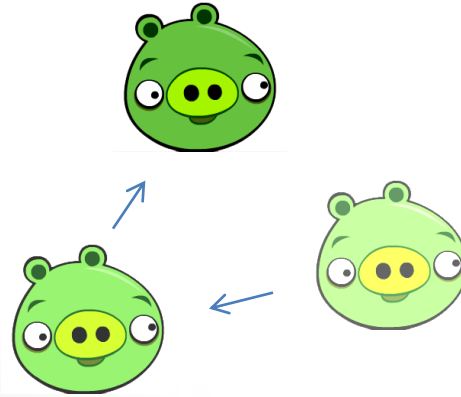
```
SequentialAnimation on y {  
    id:sqAnimation  
    loops: Animation.Infinite  
    running: true  
    // Move from minHeight to maxHeight in 330ms  
    NumberAnimation {  
        from: smiley.minHeight; to: smiley.maxHeight  
        easing.type: Easing.InSine; duration: 330  
    }  
    // Then move back to minHeight in 1 second  
    NumberAnimation {  
        from: smiley.maxHeight; to: smiley.minHeight  
        easing.type: Easing.InQuint; duration: 1000  
    }  
    // Then pause for 500ms  
    PauseAnimation { duration: 300 }  
}
```


4/4 Fun and Games: Throw Transition

```
transitions: [  
  Transition {  
    NumberAnimation {id:numtran;  
      properties: "x,y"; duration: 1000;  
      easing.type: Easing.OutCurve;}  
    NumberAnimation { target: pig ;  
      properties: "x,y"; duration: 500;  
      easing.type: Easing.OutCurve;}  
  }  
]
```

4/4 Fun and Games: Logic Timers

Pig's Random
Movement



Hit or Miss



4/4 Fun and Games: Pig Movement

```
Timer {  
    id: timerpig  
    interval: 500; running: true; repeat: true  
    onTriggered: {  
        onTriggered: txttime.text = MyClock.getTime()  
        pig.y = Math.floor(Math.random() * (1+400))+20;  
        pig.x = Math.floor(Math.random() * (1+380))+340;  
    }  
}
```

4/4 Fun and Games: Hit or Miss

```
Timer {  
    id: timersmiley  
    interval: 100; running: true; repeat: true  
    onTriggered: {  
        if(smiley.y>pig.y-smiley.height&&  
            smiley.y<pig.y+pig.height&&  
            smiley.x>pig.x-smiley.width&&  
            smiley.x<pig.x+pig.width  
            &&window.state=="angry")  
        {  
            score = score+10  
            txtscore.text = "SCORE: "+score  
            window.state="happy"  
        }  
    }  
}
```

4/4 Fun and Games on MeeGo

Demo

Angry Developer

Games



3 Steps for FAST development on MeeGo™



Thank You

Download MeeGo

<http://meego.com/downloads>

Get Qt SDK with Qt Quick

<http://get.qt.nokia.com>

Know MADDE

<http://wiki.maemo.org/MADDE>

Questions

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